

Thoughts on the Potential for Renewable Energy Contract Failure

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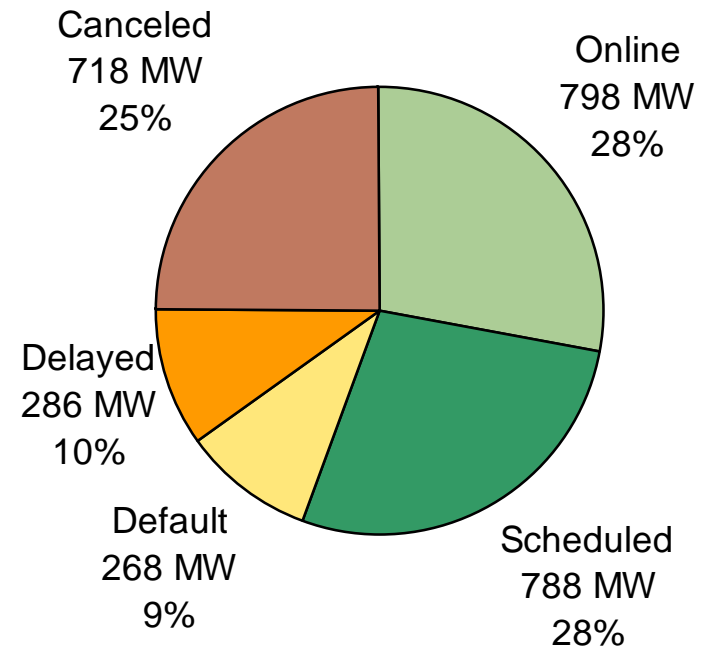
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“Building a Margin of Safety” Report

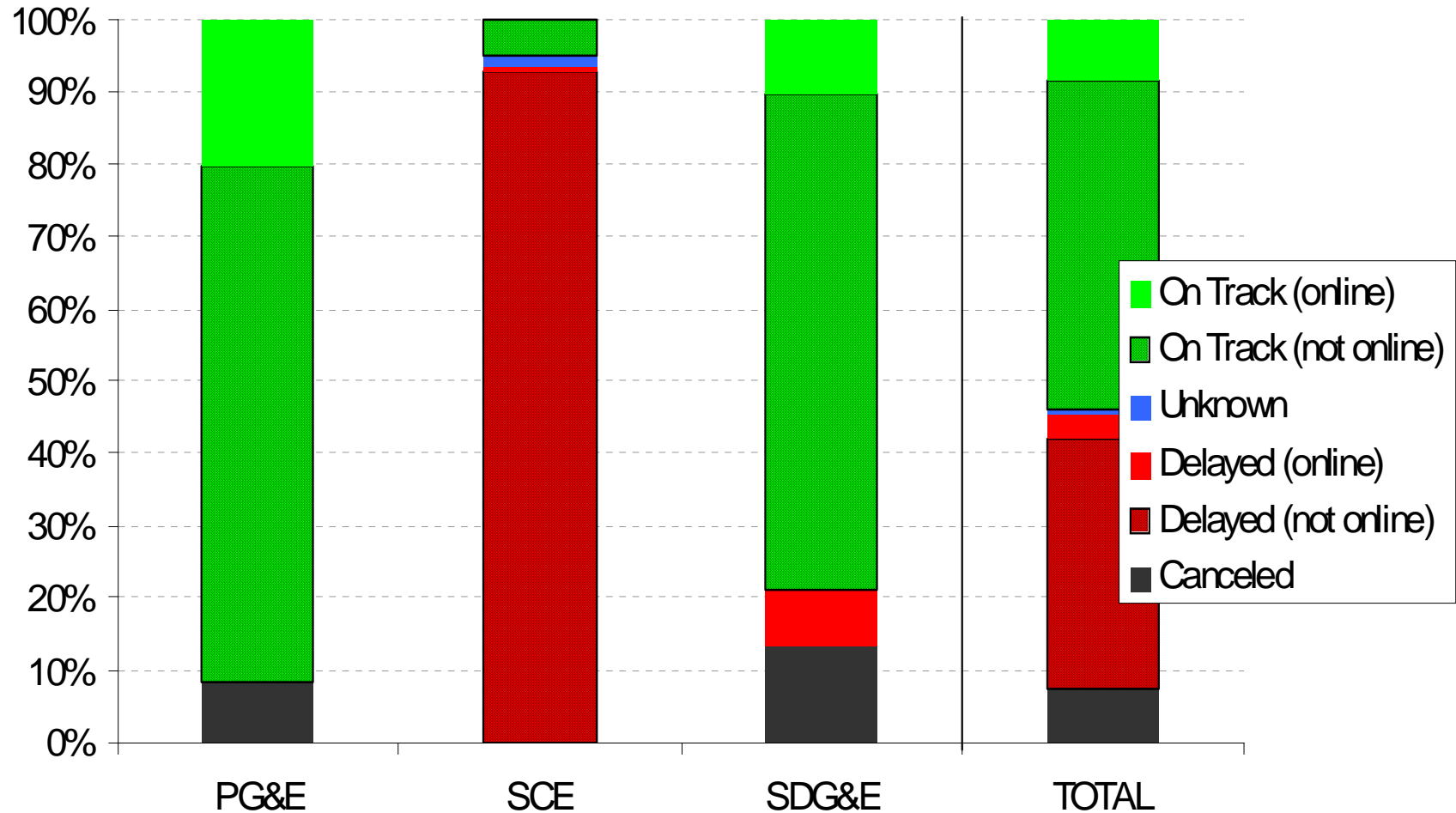
- Historical experience in California within IOUs’ service territories (QF contracts, CEC incentive auctions, early RPS contracting)
- Survey of 21 North American utility recent contracting efforts (~3,000 MW)
- Government renewable energy contract and incentive auctions (European countries and eastern states)
- Total Sample size of over 21,500 MW

Renewable Contract Failure

- Lots of It!
- Many Causes
 - Failure to site/permit
 - Increased capital costs
 - Lack of financing
 - Lack of transmission access
- Chart shows failure rate for 3,000 MW of North American Utility renewables



Contract Failure in California



Can Contract Failure be reduced?

- Yes, but...
- Project Finance makes mitigation difficult
 - Developers may be unwilling to expend significant capital until PPA is executed
- Renewable development and technology still emerging
 - While industry is maturing, there are still technology/cost risks as well as significant site/permit risks

Tradeoffs of Mitigation Techniques

- Limiting bidders to established developers
 - Limiting procurement to established developers may mean losing good projects from smaller developers
 - Industry is consolidating, however, meaning less small developers
- Raising credit requirements in development stage
 - Will increase cost of all projects
 - May scare away smaller developers
- Due Diligence by Utility
 - Expensive and time consuming
- Emerging techniques
 - Forcing developers to have financing in place, turbine supply, etc.
- These techniques are not always successful
 - Tradeoff between restricting competition and contract failure

How can the CEC and CPUC mitigate contract failure?

- Agencies can be a “champion” for contracts to assist project in obtaining permits, etc.
- Require a specific over-contracting margin
- More explicit penalties for RPS non-compliance due to contract failure
- Explore standard mitigation techniques, and appropriate tradeoffs, in a regulatory forum
- Require utilities to document in more detail project viability in CPUC contract submissions
- Change RPS procurement to something with less competition, such as a feed-in tariff.
- Other ideas?